

IN THE CLAIMS

1. (currently amended) A wireless communication system that forms a network in an autonomous distributed manner without a specific controlling station, the wireless communication system comprising:

a transmitting-side or receiving-side communication apparatus which attempts to perform communication with-in a guaranteed predetermined bandwidth, issues a notification indicating a setting of a period during which availability of the predetermined bandwidth is guaranteed period in a communication range and-so that any other communication apparatus that receives the notification does not perform a communication operation in the predetermined bandwidth during the guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication system is the transmitting-side or the receiving-side communication apparatus, the wireless communication system transmits beacon information that describes information regarding the guaranteed period.

2. (cancelled)

3. (currently amended) The wireless communication system according to claim 2, wherein the receiving-side communication apparatus creates timing utilized for a communication in the predetermined bandwidth- during the guaranteed period ~~communication, in a pseudo manner, that has a same state as timing of transmitting a beacon of its own and notifies the timing utilized for the bandwidth-guaranteed-communication in the predetermined bandwidth.~~

4. (currently amended) The wireless communication system according to claim 1, wherein, in a period in which no

communication apparatus has set a guaranteed periodbandwidth, each communication apparatus performs random access based on a collision avoidance operation that starts transmission after detecting that no transmission is performed from another communication apparatus.

5. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or receiving-side communication apparatus sets a reservation period in its own frame period and performs the communication with a guaranteed in the predetermined bandwidth by utilizing the reservation period.

6. (currently amended) The wireless communication system according to claim 1, wherein each communication apparatus collects beacon information from neighboring communication apparatuses, obtains information regarding bandwidth a period that is guaranteed to one or more of the neighboring communication apparatusesperiods, and does not set, as its own bandwidth guaranteed period, a the period that is set as bandwidth guaranteed to the one or more of periods by the neighboring communication apparatuses.

7. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or receiving-side communication apparatus collects beacon information from neighboring communication apparatuses, obtains information regarding bandwidth a period that is guaranteed to one or more of the neighboring communication apparatusesperiods, and sets, as its own bandwidth guaranteed period, a period that is not set as the bandwidth guaranteed to any of periods by the neighboring communication apparatuses.

8. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or

receiving-side communication apparatus obtains information regarding a bandwidth period that is guaranteed period from to a communication apparatus at another end of a communication and sets, as its own bandwidth guaranteed period, a period that is not set as bandwidth guaranteed to any periods by neighbors of the communication apparatus.

9. - 16. (cancelled)

17. (currently amended) A wireless communication apparatus that performs a wireless communication operation in an autonomous distributed manner without a specific controlling station, the wireless communication apparatus comprising:

communicating means for transmitting/receiving a wireless signal within its own communication range;

bandwidth-guaranteed-period setting means for requesting, within its own communication range, setting of a bandwidth-guaranteed period in_during which availability of a predetermined bandwidth is guaranteed for said wireless communication apparatus; and

communication controlling means for executing a bandwidth-guaranteed communication in the predetermined bandwidth in response to an arrival of its own bandwidth guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication apparatus is a transmitting-side or a receiving-side of a reservation communication, the wireless communication apparatus transmits beacon information that describes information regarding the guaranteed period.

18. (currently amended) The wireless communication apparatus according to claim 17, further comprising:

means for storing a bandwidth-guaranteed-period setting notification received from another wireless communication apparatus,

wherein the bandwidth-guaranteed-period setting means sets its own bandwidth guaranteed period while avoiding a bandwidth-the guaranteed period that is already set by the another wireless communication apparatus, and the communication controlling means does not perform a communication operation in the predetermined bandwidth during the guaranteed period that is set by the another communication apparatus.

19. (currently amended) The wireless communication apparatus according to claim 17, wherein in a period in which no communication apparatus has set a bandwidth-guaranteed period, the communication controlling means performs random access based on a collision avoidance operation that starts transmission after detecting that no transmission is performed from another wireless communication apparatus.

20. (currently amended) The wireless communication apparatus according to claim 17, wherein the bandwidth-guaranteed-period setting means describes information regarding the bandwidth-guaranteed period in a beacon transmitted for each predetermined frame period and transmits the beacon to inform, neighboring communication apparatuses within its own communication range, about the setting of the bandwidth guaranteed period.

21. (currently amended) The wireless communication apparatus according to claim 20, wherein the bandwidth-guaranteed-period setting means sets its own bandwidth guaranteed period by avoiding the reception timing of a beacon.

22. (currently amended) The wireless communication apparatus according to claim 20, wherein the bandwidth-guaranteed-period setting means creates timing utilized for a communication in the predetermined bandwidth during the guaranteed communication in the frame period, in a pseudo manner, that has a same state as timing of transmitting its own beacon and notifies of the timing utilized for the bandwidth-guaranteed communication in the predetermined bandwidth.

23. (currently amended) The wireless communication apparatus according to claim 17, wherein the bandwidth-guaranteed-period setting means sets a reservation period for performing the communication with a guaranteed in the predetermined bandwidth in its own frame period and the communication controlling means performs the communication with a guaranteed in the predetermined bandwidth in its own reservation period.

24. (currently amended) The wireless communication apparatus according to claim 17, wherein the bandwidth-guaranteed-period setting means of each wireless communication apparatus collects beacon information from its neighboring wireless communication apparatuses, obtains information regarding bandwidth-a period that is guaranteed to one or more of the neighboring communication apparatuses, and does not set, as its own bandwidth-guaranteed period, a the period that is set as a bandwidth-guaranteed periods by to the one or more of the neighboring wireless communication apparatuses.

25. (currently amended) The wireless communication apparatus according to claim 17, wherein the bandwidth-guaranteed-period setting means collects beacon information from neighboring communication apparatuses, obtains information regarding bandwidth-a period that is guaranteed to one or more

of the neighboring communication apparatuses periods, and sets a period that is not set as bandwidth guaranteed periods by the one or more of the neighboring communication apparatuses to as its own bandwidth guaranteed period.

26. (currently amended) The wireless communication apparatus according to claim 17, wherein the bandwidth-guaranteed-period setting means obtains information regarding a bandwidth period that is guaranteed period from to a communication apparatus at another end of a communication and sets a period that is not set as bandwidth guaranteed periods by to any neighbors of the wireless communication apparatus to the as its own bandwidth guaranteed period.

27.-34. (cancelled)

35. (currently amended) A wireless communication method for performing a wireless communication operation in an autonomous distributed manner without a specific controlling station, the wireless communication method comprising:

issuing, within its own a communication range of a given wireless communication apparatus, a notification indicating a setting of a bandwidth guaranteed period in during which availability of a predetermined bandwidth is guaranteed to that wireless communication apparatus; and

executing, a bandwidth guaranteed by the given wireless communication apparatus, communication in the predetermined bandwidth in response to an arrival of its own bandwidth guaranteed period,

wherein, for each predetermined frame period, regardless of whether the given wireless communication apparatus is a transmitting-side or a receiving-side of a reservation communication, the wireless communication

apparatus transmits beacon information that describes information regarding the guaranteed period.

36. (currently amended) The wireless communication method according to claim 35, further comprising:

storing a bandwidth-guaranteed-period setting notification received from another communication apparatus,

wherein the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period includes setting its own bandwidth guaranteed period while avoiding a bandwidth-guaranteed period that is already set by another communication apparatus, and

the step of executing bandwidth-guaranteed communication does in the predetermined bandwidth is not performed a communication operation in the bandwidth guaranteed period that is set by the another communication apparatus.

37. (currently amended) The wireless communication method according to claim 35, wherein in a period in which no communication apparatus has set a bandwidth-guaranteed period, random access is performed based on a collision avoidance operation, which starts transmission after detecting that no transmission is performed from another communication apparatus, is performed.

38. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period, information regarding the bandwidth-guaranteed period is described in a beacon transmitted for each predetermined frame period and the beacon is transmitted to thereby inform neighboring communication apparatuses within its own

communication range, about the setting of the bandwidth-guaranteed period.

39. (currently amended) The wireless communication method according to claim 38, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period, its own bandwidth-guaranteed period is set by avoiding the reception timing of the beacon.

40. (currently amended) The wireless communication method according to claim 38, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period, timing utilized for a communication in the predetermined bandwidth during the guaranteed communication in a frame period is created in a pseudo manner to have a same state as timing of transmitting its own beacon and a notification indicating the timing utilized for the bandwidth-guaranteed communication is issued.

41. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period, a reservation period for performing the communication with a guaranteed bandwidth is set in own frame period, and in the step of executing bandwidth-guaranteed communication, the communication with a guaranteed bandwidth is performed in the reservation period.

42. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period of each communication apparatus, beacon information is collected from neighboring communication apparatuses, information regarding bandwidth guaranteed periods guaranteed to one or more of the neighboring communication apparatuses is

obtained, and a the period that is set as bandwidth-guaranteed periods by to the one or more of the neighboring communication apparatuses is not set as its own bandwidth-guaranteed period.

43. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period of a transmitting-side or receiving-side communication apparatus, beacon information is collected from neighboring communication apparatuses, information regarding bandwidth guaranteed a periods guaranteed to one or more of the neighboring communication apparatuses is obtained, and a period that is not set as the bandwidth-guaranteed periods by to the one or more of the neighboring communication apparatuses is set to the as its own bandwidth-guaranteed period.

44. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period, information regarding a bandwidth-guaranteed period is obtained from a communication apparatus at another end of a communication, and a period that is not set as bandwidth guaranteed periods by to any neighbors of the communication apparatus is set to as its own bandwidth-guaranteed period.

45.-52. (cancelled)

53. (currently amended) A wireless communication system, comprising:

a processor having operable to execute computer program instructions described in a computer-readable format;

the computer program for carrying out a method of performing a wireless communication operation in an autonomous distributed manner without a specific

controlling station, the method computer program instructions comprising:

issuing notifying, within its own a communication range of the wireless communication system, a notification of a setting of a bandwidth-guaranteed period in during which availability of a predetermined bandwidth is guaranteed to that wireless communication apparatus, and

executing a bandwidth-guaranteed communication in the predetermined bandwidth in response to an arrival of its own bandwidth the guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication system is a transmitting-side or a receiving-side of a reservation communication, the wireless communication system transmits beacon information that describes information regarding the guaranteed period.

54. (currently amended) The system processor according to claim 53, wherein the computer program instructions method further comprises:

storing a bandwidth-guaranteed-period setting request received from another communication apparatus,

wherein, the step of issuing the notification indicating the setting of the bandwidth-guaranteed-period includes setting its own bandwidth-guaranteed period while avoiding a bandwidth-guaranteed period that is already set by another communication apparatus, and

the step of executing bandwidth-guaranteed communication does in the predetermined bandwidth is not performed a communication operation in the bandwidth

guaranteed period ~~that is set by~~ the another communication apparatus.

55. (cancelled)